

Listing of All Claims Presented

1. (original) A method for storing an XML document in a relational database system which comprises, in combination, the steps of:

 parsing the character data in said XML document to identify characters representing data values within at least some of the elements of said XML document,

 storing each of said data values in a specified column location in one or more specified rows of one or more specified tables in said relational database system,

 removing at least some of said data values from said XML document and storing the remainder of said XML document in said database as an XML skeleton which defines the structure of said XML document,

 thereafter reconstructing said XML document by merging the data content of said specified rows with said XML skeleton.

2. (original) The method set forth in claim 1 wherein the data value stored in each of said specified columns is obtained from a leaf element of said XML document which contains no sub element.

3. (original) The method set forth in claim 2 wherein the data values stored in each given one of said specified rows is obtained from an XML element which contain one or more of given ones of said leaf elements, the data values in said given ones of said leaf elements being stored in columns in said given one of said specified rows.

4. (original) The method set forth in claim 3 further includes the step of storing data describing the properties of at least selected ones of said data values.

5. (original) The method set forth in claim 4 wherein said properties include the designation of one or more of said data values as a primary key for use by said relational database system.

6. (original) The method set forth in claim 5 wherein said properties further include the designation of the data type for at least some of said data values.

7. (original) The method set forth in claim 6 wherein said properties further include the designation of one or more of said data values as indexing values.

8. (original) The method set forth in claim 1 further including the step of designating one or more of said elements of said XML documents as static elements and for identifying said static elements during said step of removing at least some of said data values to prevent removal of the data values in said static elements so that said data values in said static elements are retained in said XML skeleton.

9. (original) A method for storing an XML document as set forth in claim 1 further comprising the step of performing a relational database operation to modify the data value stored in at least one of said column locations such that the step of reconstructing said XML document produces a modified XML document.

10. (original) The method for storing an XML document as set forth in claim 4 wherein said step of storing data describing the properties of at least selected ones of said data values comprises means for storing an XML Descriptor which includes information obtained from the document type definition (DTD) associated with said XML document.

11. (original) The method set forth in claim 10 wherein said XML Descriptor further specifies one or more of the elements of said XML document which contain primary key data values, and wherein said step of removing at least some of said data values does not remove said primary key data values but instead retains said primary key values in said skeleton

12. (original) The method set forth in claim 11 wherein said XML Descriptor further specifies the data type of the data values in one or more specified elements of said XML document.

13. (original) The method set forth in claim 12 wherein said XML Descriptor further identifies one or more of said data values as indexed data values.

14. (canceled)

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)